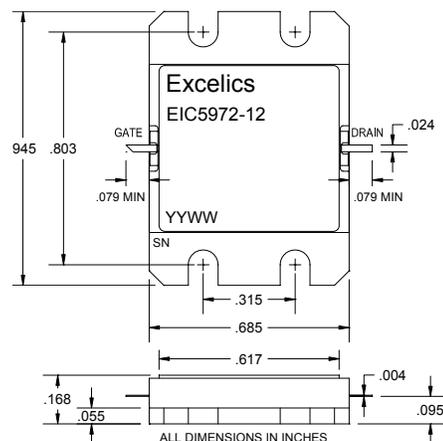


### FEATURES

- 5.90– 7.20GHz Bandwidth
- Input/Output Impedance Matched to 50 Ohms
- +41.5 dBm Output Power at 1dB Compression
- 9.0 dB Power Gain at 1dB Compression
- 36% Power Added Efficiency
- -46 dBc IM3 at  $P_{out} = 30.5$  dBm SCL
- Hermetic Metal Flange Package
- 100% Tested for DC, RF, and  $R_{TH}$



### ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )



Caution! ESD sensitive device.

SYMBOL	PARAMETERS/TEST CONDITIONS <sup>1</sup>	MIN	TYP	MAX	UNITS
$P_{1dB}$	Output Power at 1dB Compression $f = 5.90-7.20\text{GHz}$ $V_{DS} = 10\text{ V}, I_{DSQ} \approx 3200\text{mA}$	40.5	41.5		dBm
$G_{1dB}$	Gain at 1dB Compression $f = 5.90-7.20\text{GHz}$ $V_{DS} = 10\text{ V}, I_{DSQ} \approx 3200\text{mA}$	8.0	9.0		dB
$\Delta G$	Gain Flatness $f = 5.90-7.20\text{GHz}$ $V_{DS} = 10\text{ V}, I_{DSQ} \approx 3200\text{mA}$			$\pm 0.8$	dB
PAE	Power Added Efficiency at 1dB Compression $V_{DS} = 10\text{ V}, I_{DSQ} \approx 3200\text{mA}$ $f = 5.90-7.20\text{GHz}$		36		%
$I_{d1dB}$	Drain Current at 1dB Compression $f = 5.90-7.20\text{GHz}$		3400	3800	mA
IM3	Output 3rd Order Intermodulation Distortion $\Delta f = 10\text{ MHz}$ 2-Tone Test; $P_{out} = 30.5\text{ dBm S.C.L.}^2$ $V_{DS} = 10\text{ V}, I_{DSQ} \approx 65\% IDSS$ $f = 7.20\text{GHz}$	-43	-46		dBc
$I_{DSS}$	Saturated Drain Current $V_{DS} = 3\text{ V}, V_{GS} = 0\text{ V}$		6000	7500	mA
$V_P$	Pinch-off Voltage $V_{DS} = 3\text{ V}, I_{DS} = 60\text{ mA}$		-2.5	-4.0	V
$R_{TH}$	Thermal Resistance <sup>3</sup>		2.5	3.0	$^\circ\text{C/W}$

Note: 1) Tested with 50 Ohm gate resistor.

2) S.C.L. = Single Carrier Level.

3) Overall  $R_{th}$  depends on case mounting.

### MAXIMUM RATING AT $25^\circ\text{C}$ <sup>1,2</sup>

SYMBOLS	PARAMETERS	ABSOLUTE	CONTINUOUS
$V_{ds}$	Drain-Source Voltage	15	10V
$V_{gs}$	Gate-Source Voltage	-5	-4V
$I_{gsf}$	Forward Gate Current	129.6mA	43.2mA
$I_{gsr}$	Reverse Gate Current	-21.6mA	-7.2mA
$P_{in}$	Input Power	40.5dBm	@ 3dB Compression
$T_{ch}$	Channel Temperature	175 $^\circ\text{C}$	175 $^\circ\text{C}$
$T_{stg}$	Storage Temperature	-65 to +175 $^\circ\text{C}$	-65 to +175 $^\circ\text{C}$
$P_t$	Total Power Dissipation	50W	50W

Note: 1. Exceeding any of the above ratings may result in permanent damage.

2. Exceeding any of the above ratings may reduce MTTF below design goals.

Specifications are subject to change without notice.

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Revised November 2006



# EIC5972-12

UPDATED 11/10/2006

## 5.90-7.20 GHz 12-Watt Internally Matched Power FET

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2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness

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Revised November 2006